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Newport
South Wales
NP10 8QQ

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I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the application is now proceeding in the name as identified herein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Signed

Dated 26 May 2004

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GB0114441.9

By virtue of a direction given under Section 30 of the Patents Act 1977, the application is proceeding in the name of:-

GENTECH INVESTMENT GROUP AG
Incorporated in Switzerland
Baarerstrasse 112, Treuhand-und Revisiongesellschaft Zug
6302 Zug
Switzerland

ADP No. 08361271001

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P01/7700 0.00-0114441.9

Patents Form 1/77
Patents Act 1977
(Rule 16)

**The
Patent
Office**

Request for grant of a patent

The Patent Office
Cardiff Road
Newport
South Wales NP10 8QQ

1. Your reference
1855401/AM

2. Patent Application Number

0114441.9

13 JUN 2001

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)

Sensopad Technologies Limited
Marston Mill
Hartley
Cambridgehire
CB2 5GG

SECTION 30 (1977 ACT) APPLICATION FILED
815747100

15.03.02

Patents ADP number (*if known*)

If the applicant is a corporate body, give the
country/state of its incorporation

Country: ENGLAND
State:

4. Title of the invention

NOVEL LIQUID LEVEL SYSTEM

5. Name of agent

Beresford & Co

"Address for Service" in the United Kingdom
to which all correspondence should be sent

**2/5 Warwick Court
High Holborn
London WC1R 5DH**

Patents ADP number

1826001

6. Priority details

Country

Priority application number


Date of filing

Patents Form 1/77

7. If this application is divided or otherwise derived from an earlier UK application give details
Number of earlier application _____ Date of filing _____

8. Is a statement of inventorship and or right to grant of a patent required in support of this request?
Yes _____

9. Enter the number of sheets for any of the following items you are filing with this form.

0 Continuation sheets of this form
2  Description
0 Claim(s)
0 Abstract
0 Drawing(s)

10. If you are also filing any of the following, state how many against each item.

0 Priority documents
0 Translations of priority documents
1 + 1 copy Statement of inventorship and right to grant of a patent (*Patents form 7/77*)
0 Request for preliminary examination and search (*Patents Form 9/77*)
0 Request for Substantive Examination (*Patents Form 10/77*)
0 Any other documents (*please specify*)

11. I/We request the grant of a patent on the basis of this application

Signature _____

BERESFORD & Co

Date 13 June 2001

12. Name and daytime telephone number of person to contact in the United Kingdom

ALAN MACDOUGALL

Tel: 020 7831 2290

Novel Liquid Level System

Background

There are various types of washing machines - the most common being the domestic clothes and dishwashing types. There are also, for example, industrial and special purpose washing machines for degreasing and sterilising.

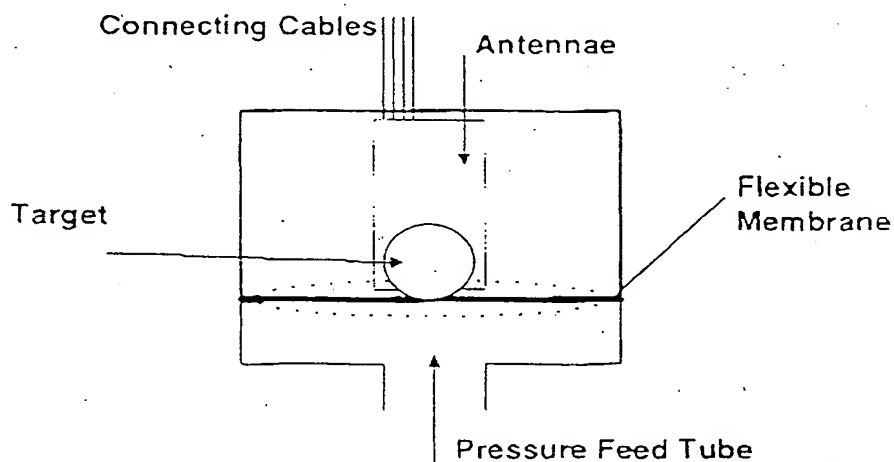
To achieve high levels of energy efficiency and performance it is necessary for washing machines to use a wash cycle optimised for both the type and amount of contents placed within them.

In order to maximise energy efficiency the minimum amount of liquid washing agent, most typically water, should be used to achieve adequate cleaning. This means that the amount of liquid must be measured and dosed accordingly. The liquid level in a washing machine is usually measured using the variation in pressure in a feed tube connected to the underside of the drum container. This is most often measured using piezo -resistive or similar methods and is well understood and publicised already.

Invention

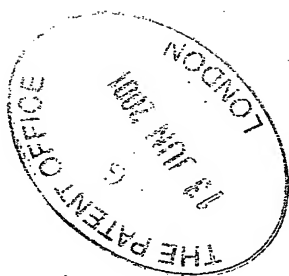
This invention teaches an alternative and novel technique using inductive resonance.

The invention is shown schematically below:



As the water level increases the pressure in the feed tube increases. As the pressure increases the membrane (or alternatively a Bourdon type tube or similar body which basically provides a barrier between the atmospheric pressure and the higher internal

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pressure) flexes. The resulting displacement can be measured using an inductively resonant passive electronic circuit. The circuit is either part of or connected to the membrane. The resonant circuit is made up from two main functional elements - a coil (or inductance) and a capacitor. A nearby antenna energises the circuit by electromagnetic inductance. The antenna then detects the subsequent inductive signal caused by the resonance of the circuit. By suitably arranging the antennae's receive coils the position of the target can be accurately measured.

Since there is no physical contact between the antennae and the target, the antennae may be positioned on the outside of any casework. This more readily enables the design of a secure and waterproof housing.

The processing electronics for the invention will comprise means for generating, regulating, sensing and processing the signals to and from the antennae. The output from the electronics will most typically be an analogue or digital signal to the washing machine's main electronic controls.

The same electronics may be used for both this invention and the previously disclosed invention the 'Novel Weighing & Vibration Monitoring System' or 'Man-Machine Interface Using Relative Position Sensor' by the same author. By sharing the same electronics the cost of the complete system is minimised. Such sharing may be achieved by the use of time division or using different frequencies in each sensor.

Further valuable information for the washing machine's control system can be provided by using the Novel Weighing & Vibration Monitoring System together with the Liquid Level Systems.

The contents in the wash drum may be weighed by the weighing system. The weight of the liquid in the drum may also be measured by the weighing systems. The level of liquid may be measured by the liquid level system. By comparing the various measurements the absorption characteristics of the clothes may be measured. Such information may be used by the overall control systems to optimise the full wash cycle. For example, such information may be used to optimally dry the contents in a combined or connected washer-dryer or to gauge the correct dosage of detergent.

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